

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/056873 A1

(51) International Patent Classification⁷: **C23C 16/01**,
16/32

(21) International Application Number:
PCT/US2004/040629

(22) International Filing Date: 6 December 2004 (06.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/729,262 5 December 2003 (05.12.2003) US

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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

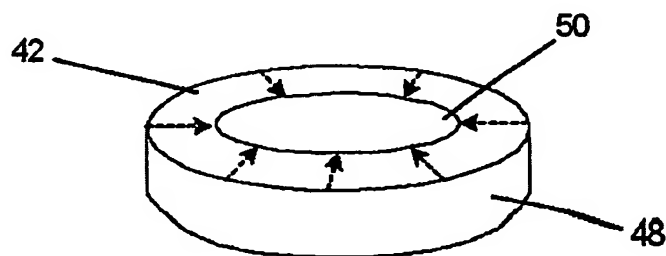
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: **FREE-STANDING SILICON CARBIDE ARTICLES FORMED BY CHEMICAL VAPOR DEPOSITION AND METH-
ODS FOR THEIR MANUFACTURE**



(57) Abstract: Improved methods for manu-
facturing silicon carbide rings using chemical
vapor deposition. Cylindrical tubes are used as
deposition substrates and the resulting material
deposited on the inside surface of cylindrical
tubes or on the outside surface of cylindrical
mandrels, or both, is sliced or cut into the desired
ring size and shape. The resulting rings have
a crystal growth that is oriented substantially
planar to the finished article. The invention
also relates to nitrogen doped silicon carbide
material, as well as to silicon carbide structures
having axes of grain growth substantially parallel
to the plane of the structure and to each other,

and having rotational orientation that is substantially random with respect to the axes of grain growth of the grains.